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Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

000025927

July 13, 1994

Mr. Steve Slaten
U.S. Department of Energy
Rocky Flats Office, Bldg 116
P.O. Box 928
Golden, Colorado 80402-0928

RE: Data Quality Concerns - Mobile Soil Gas Laboratory Analytical Methods

Dear Mr. Slaten,

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the "Division"), has reviewed the information submitted June 2, 1994 (94-DOE-06347) in response to the Division's May 18, 1994 inspection of the mobile soil gas sample analysis laboratory. Based on the limited information submitted, the Division has significant concerns with the quality of data collected using the method described in Walsh and Associates, Inc. - Volatile Organic Compound Analysis of Air and soil gas Samples By Thermal Desorption and Gas Chromatography/ Mass Spectrometry, Rev.0. These concerns are as follows:

1) These data are not of known precision and accuracy. The data submitted and observations by Division inspectors in the field indicate that daily calibration drift is considered acceptable by the contractor with deviations of +/-50% RSD on Continuing Calibration Check compounds (CCCs). Typical performance criteria for Continuing Calibration Check compounds (CCCs) using like methodology are +/-30% RSD for SW-846 method 8260, and +/- 20% for EPA method 524.2.

2) The acceptance of calibration checks with such wide swings (+/- 50 % RSD) indicates that the control of the method is dubious. Also, concomitant with these wide swings in calibration checks are variations in sensitivity (e.g. +/- 50% on MDL). The implications of such variations at, or near the detection limit can be calculated from the variation itself, such that the odds are 50/50 that low concentration compound will be detected at all.

The Division believes that the use of an undocumented method that lacks peer review such as this requires the user to define the Performance Characteristics of the method. In order to understand these data, the Division requests the following information:

1) Method Development and Validation "report" or documentation (necessary since this is not a standard method) to include precision, accuracy, specificity, and sensitivity;
2) Detection limit study and methodology;
3) QA process and schedule.

The Division is disappointed that the DOE has elected not to submit a copy of the soil gas sample laboratory analysis results as requested in the notice of inspection. The DOE response that results will be included in the technical memorandum for this field work is not acceptable, since quality assured soil gas results will be available well in advance of the field work technical memorandum. The Division is aware that per paragraph 209 of the IAG, DOE is required to make available to the State quality assured results, but the IAG also requires that raw data shall be submitted if quality assurance is not completed within the time frame specified in the statement of work or workplan.

1/2

Therefore, the Division requests documentation of the quality assurance reviews to be conducted on this data and the time frame for its completion. Without the soil gas analytical results, the Division can not make a complete determination of the adequacy of the specific analytical methods or procedures being utilized in the collection and analysis of soil gas samples, nor can the Division meet it's own QA plan for project data which states that the precision and accuracy of data must be known and acceptable.

If you have any questions regarding these matters, please call Jeff Swanson of my staff at 692-3416.

Sincerely,

Joe Schieffelin
Rocky Flats IAG Unit Leader
Facilities Section
Hazardous Waste Control Program

cc: Martin Hestmark, EPA
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2/2